

REMARKS

This amendment is submitted to cancel claims in order to reduce the filing fee. There is no new matter added, and entry of the amendment is respectfully requested.

The Examiner is hereby invited to contact the undersigned by telephone if there are any questions concerning this amendment or application.

Respectfully submitted,

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Franks et al

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For: Neutral Deinking with a Deinking Composition Comprising a Lipase and a Fatty Acid Ester

VERSION WITH MARKINGS TO SHOW CHANGES MADE

Sir:

Below is a marked-up version of the amendments made in the accompanying amendment.

IN THE CLAIMS:

Claims 3-10, 12-14, 19, 21, 23, 26-27 have been amended as follows:

1. (Unchanged.) A method for deinking wastepaper comprising the steps of

- i) pulping the wastepaper at a pH between 4 and 8.5 in the presence of deinking agent comprising a lipase and a fatty acid ester; and
- ii) removing the thereby dislodged ink particles.

3. (Amended.) A method according to [any of the preceding claims] claim 1, wherein the wastepaper comprises old newspapers [(ONP)].

4. (Amended.) A method according to claim 3, wherein the amount of [ONP] old newspapers constitutes at least 10% by weight of the total amount of wastepaper.

5. (Amended.) A method according to claim 4, wherein the wastepaper consists essentially of old newspapers [ONP].

6. (Amended.) A method according to [any of claims 1-2] claim 1, wherein the wastepaper comprises waste magazines [(WM)].

7. (Amended.) A method according to claim 6, wherein the amount of [WM] waste magazines constitutes at least 10% by weight of the total amount of wastepaper.

8. (Amended.) A method according to claim 7, wherein the wastepaper consists essentially of [WM] waste magazines.

9. (Amended.) A method according to [any of claims 1-2] claim 1, wherein the wastepaper comprises [ONP and WM] old newspapers and waste magazines.

10. (Amended.) A method according to claim 9, wherein the wastepaper comprises 1-60% by weight of [WM] waste magazines and 40-99% by weight of [ONP] old newspapers.

12. (Amended.) A method according to [any of the preceding claims] claim 1, wherein the pulping with the deinking agent is carried out at a temperature from 25 to 75°C.

13. (Amended.) A method according to [any of the preceding claims] claim 1, wherein the fatty acid ester is a methyl ester, an ethyl ester, a *n*-propyl ester, an isopropyl ester, a *n*-butyl ester, an isobutyl ester, a *sec*-butyl ester, a *tert*-butyl ester, a monoglyceride, a diglyceride or a triglyceride of a C₆-C₂₂ fatty acid, the C₆-C₂₂ fatty acid being optionally substituted with one or more hydroxy, ethoxy, *n*-propoxy and/or isopropoxy groups.

14. (Amended.) A method according to [any of claims 1-13] claim 1, wherein the fatty acid ester is a C₆-C₂₂ fatty acid, which has been alkoxylated with ethylene oxide, propylene oxide, or a combination thereof.

15. (Unchanged.) A method according to claims 13 or 14, wherein the fatty acid moiety of the fatty acid ester is selected from the group consisting of caproic acid (6:0), enanthic acid (7:0), caprylic acid (8:0) pelargonic acid (9:0), capric acid (10:0) undecylenic acid (11:0), lauric acid (12:0), tridecylic acid (13:0), myristic acid (14:0), palmitic acid (16:0), stearic acid (18:0), palmitoleic acid (16:1), oleic acid (18:1), elaidic acid (18:1), ricinoleic acid (18:1), linoleic acid (18:2), linolenic acid (18:3) and mixture thereof.

16. (Unchanged.) A method according to claims 13 or 14, wherein the fatty acid moiety of the fatty acid ester is substituted with one or more ethoxy and/or isopropoxy groups.

17. (Unchanged.) A method according to claim 16, wherein fatty acid moiety of the fatty acid ester is substituted with ethoxy and isopropoxy groups of the general formulae

-(O-CH₂-CH₂)_x-(O-CH(CH₃)-CH₂)_y-OH,
-(O-CH₂-CH₂)_x-(O-CH₂-CH(CH₃))_y-OH,
-(O-CH(CH₃)-CH₂)_y-(O-CH₂-CH₂)_x-OH, or
-(O-CH₂-CH(CH₃))_y-(O-CH₂-CH₂)_x-OH,

wherein x is an integer in the range from 1 to 25, and y is an integer in the range from 1 to 10.

18. (Unchanged.) A method according to claim 17, wherein x is an integer in the range from 1 to 10, and y is an integer in the range from 1 to 5.

19. (Amended.) A method according to [any of claims 14-18] claim 14, wherein the fatty acid ester is a triglyceride.

20. (Unchanged.) A method according to claim 19, wherein the fatty acid ester is Hartaflot G-5000TM.

21. (Amended.) A method according to [any of the preceding claims] claim 1, wherein the pulping step is carried out in the presence of a starch degrading enzyme.

22. (Unchanged.) A method according to claim 21, wherein the starch degrading enzyme is an amylase.

23. (Amended.) A method according to [any of the preceding claims] claim 1, wherein the pulping step is carried out in the presence of a cellulase.

24. (Unchanged.) A method according to claim 23, wherein the cellulase is a mono component cellulase.

25. (Unchanged.) A method according to claim 24, wherein the cellulase lacks a cellulose binding domain.

26. (Amended.) A method according to [any of the preceding claims] claim 1, wherein the lipase is added in an amount corresponding to 0.001 – 0.15% by weight of the dry pulp.

27. (Amended.) A method according to [any of the preceding claims] claim 1, wherein the fatty acid ester is added in an amount corresponding to 0.025 - 1% by weight of the dry pulp.